VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the **reissuance** of the VPDES permit listed below. This permit is being processed as a **Minor, Municipal** permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et.seq. The discharge results from the operation of a 0.108 MGD secondary WWTP consisting of: Two raw wastewater pump stations, Imhoff tank, two-stage rotating biological contactor unit, dual secondary clarifiers, gas chlorinator, dual baffled chlorine contact basins, dual sulfonators for dechlorination, fine bubble diffusers for post aeration, Parshall flume and ultrasonic flow meter, and 8 covered sand drying beds.

The sludge treatment scheme consists of: anaerobic digestion in Imhoff tank, and pumping digested sludge to sand drying beds. Final sludge disposal is discussed in item 10. below.

This permit action consists of limiting pH, BOD_5, suspended solids, total residual chlorine, E.coli, and dissolved oxygen; and including special conditions requiring control of significant dischargers, sludge management, and other requirements and special conditions.

SIC Code: 4952

1. Facility Name and Location:
Falls Mills - Hales Bottom Sewage Treatment Plant
Intersection of Routes 102 and 643
Falls Mills, VA 24613

2. **Permit No. VA0062561**
Existing Permit Effective Date: August 25, 2007
Existing Permit Expiration Date: August 24, 2012

3. Owner Name and Address:
Tazewell County Public Service Authority
P.O. Box 190
N. Tazewell, VA 24630

Owner Contact:
Name: Dahmon Ball
Telephone No.: 276-988-2243
Title: Administrator

Facility Contact:
Name: Eddie Rhudy
Title: Chief Operator
Telephone No: 276-326-3788

4. Application Complete Date: April 2, 2012
Permit Drafted By: Fred M. Wyatt Date: April 2, 2012
Southwest Regional Office
Reviewed By: Steve E. Actis Date: 4/24/2012
Public Comment Period Dates: from _____ to _____

5. Receiving Stream Name: Bluestone River; River Mile: 9-BST066.41 Basin: New River; Subbasin: None; Section: 1g; Class: IV; Special Standards: u

1-Day, 10-Year Low Flow (1Q10): 4.62 MGD (June - Nov.)
1Q10 High Flow: 6.25 MGD (Dec. - May
7-Day, 10-Year Low Flow (7Q10): 6.32 MGD (June - Nov.)
7Q10 High Flow: 10.54 MGD (Dec. - May)
30-Day, 10-Year Low Flow (30Q5): 13.80 MGD
30Q10 High Flow: 23.84 MGD
Harmonic Mean Flow (HM): 23.53 MGD

Tidal? No

On 303(d) list? Yes (See Item # 13 below)

6. Operator License Requirements: Class III

7. Reliability Class: II

8. Permit Characterization:
( ) Private ( ) Federal ( ) State (X) POTW ( ) PVOTW
( ) Possible Interstate Effect ( ) Interim Limits in Other Document

9. Attach a schematic of wastewater treatment system, and provide a general description of the activities of the facility.

Discharge Description

OUTFALL NUMBER	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	Falls Mills - Hales Bottom Area of Tazewell Co.	See Page 1 above, first paragraph	0.108 MGD

(1) List operations contributing to flow (2) List treatment units
(3) Design flow

10. Sewage Sludge Use or Disposal: The sludge disposal plan consists of transporting the sludge to the Tazewell County Landfill.

11. Discharge Location Description: See attached Bramwell West Va. - Va. Quadrangle; Number: 115D

12. Material Storage: None reported

13. Ambient Water Quality Information: The 2010 303(d) Report lists mainstream Bluestone River as impaired, from the Route 460 bridge downstream to the West Virginia political boundary and includes Big Branch from the headwaters downstream to the confluence with the Bluestone River. The segment is not supporting the use goals of recreation, aquatic life, and fish consumption. The impairment causes are listed as bacterial (total E.coli and fecal coliform); benthic-macroinvertebrate impairment (from sedimentation and siltation and chlordane in sediment); PCBs in sediment, PCBs and chlordane in fish

tissue, and PCBs in water column. The 303(d) Report attributes raw sewage discharges in rural residential areas as the source of the E.coli and fecal coliform violations. The report attributes the benthic-macroinvertebrate impairment (from sedimentation and siltation) to crop production, silviculture activities, and unrestricted cattle access. The Report attributes the PCBs impairments to illegal dumps or other inappropriate waste disposal, with the actual sources unknown. The source of the chlordane impairment is unknown. See the 2010 Fact Sheets in ATTACHMENT 4 for details for these impairments.

A TMDL study was completed for bacteria and sediment in the Bluestone River and was approved by the SWCB on 09/07/2004 and by EPA on 09/20/2004. On 07/16/2006, EPA approved the modification of the TMDL to accommodate an increase in suspended solids loadings resulting from the Bluefield Westside WWTP expansion that would result in an insignificant increase in the total allocated sediment loads in the TMDL for Bluestone River of approximately 0.6%. The modification was approved by SWCB on 09/07/2006.

14. Antidegradation Review & Comments: Tier I (X) Tier II ( ) Tier III ( )

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. The receiving stream is Tier I, due to the benthic - macroinvertebrate impairment from sediment and chlordane and from PCBs in the water column.

15. Site Inspection: Technical inspection was conducted on 12/09/2010 by Wade Carico, DEQ-SWRO.

16. Effluent Screening & Limitation Development:

The VPDES Permit was originally issued on August 24, 1982 with secondary treatment (30 mg/l) effluent limitations for BOD_5. The facility was being constructed with funds from EPA, which was only funding secondary treatment. The permit was reissued on August 24, 1987 with limits of 13.5 mg/l for BOD_5 in order to comply with the New River Basin Plan (303e) for the area. Original calculations indicated that no ammonia nitrogen effluent limits were needed. Ammonia nitrogen has been re-evaluted during this reissuance, and no limits are needed.

Basis for Effluent Limitations: 0.108 MGD Design Flow

PARAMETER	BASIS FOR LIMITS *	DISCHARGE LIMITS				MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NA	NL	Continuous	Totalizing, Indicating & Recording
pH	2	NA	NA	6.0 SU	9.0 SU	1/Day	Grab
BOD_5	1,4	14 mg/l 5.5 kg/d	20 mg/l 8.3 kg/d	NA	NA	3 Days/Week	8 Hour Comp.
Total Suspended Solids	1	30 mg/l 12 kg/d	45 mg/l 18 kg/d	NA	NA	1 Day/Week	8 Hour Comp.
Total Residual Chlorine**	2,5	0.24 mg/l	0.29 mg/l	NA	NA	3/Day @ 4 Hr. Intervals	Grab
E.coli (n/100 ml)	2	126 Geometric Mean	NA	NA	NA	1/Week Between 10:00 am & 4:00 pm	Grab
Dissolved Oxygen	2,5	NA	NA	6.0	NA	1/Day	Grab

*1. Federal Effluent guidelines
2. Water Quality-based Limits
3. Best Engineering Judgment
4. Best Professional Judgment
5. Other (e.g. wasteload allocation model)

Additional TRC Limitations and Monitoring Requirements:

1. The permittee shall monitor the Total Residual Chlorine (TRC) at the outlet of each operating chlorine contact tank, 3/day at 4 hour intervals, by grab sample.
2. No more than nine (9) of all samples for TRC taken at the outlet of each chlorine contact tank shall be less than 1.0mg/l for any one calendar month.
3. No TRC sample collected at each outlet of the chlorine contact tank shall be less than 0.6 mg/l.
4. If dechlorination facilities exist, the samples above shall be collected prior to dechlorination.
5. If chlorine disinfection is not used, E.coli shall be limited and monitored by the permittee as specified below and this requirement, if applicable, shall substitute for the TRC and E.coli requirement delineated elsewhere in Part I of this permit:

	Discharge Limitations		Monitoring Requirements	
	Monthly Avg.	Weekly Avg.	Frequency	Sample Type
E.coli (N/100ml)	126*	NA	3 Days/Week**	Grab

* Geometric Mean
** Between 10:00 a.m. and 4:00 p.m.

17. Basis for Sludge Use & Disposal Requirements: The VPDES Permit Regulation (9 VAC 25-31-10 et seq.), adopted by the State Water Control Board May 22, 1996, became effective on July 24, 1996. Among other program changes, Part VI of the newly adopted regulation incorporated technical standards for the use or disposal of sewage sludge.

18. Antibacksliding Statement: Since no effluent limitations are being relaxed in this reissuance, the antibacksliding provisions of the Permit Regulation (9 VAC 25-31-220.1) do not apply.

19. Compliance Schedule: NA

20. Special Conditions:

PART I.B. Additional TRC Limitations and Monitoring Requirements
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC 25-790. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

PART I.C. Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

PART I.D. Special Condition - Control of Significant Dischargers
Rationale: VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR part 403 require certain existing and new sources of pollution to meet specified regulations.

PART I.E. Other requirements and Special Conditions

1. **95% Capacity Reopener**
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits

2. **Indirect Dischargers**
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 1 and B 2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

3. **CTC, CTO Requirement**
Rationale: Required by the Code of Virginia § 62.1-44.19: Sewage Collection and Treatment Regulations, 9VAC 25-790; VPDES Permit Regulation, 9VAC25-31-190E.

4. **Operation and Maintenance Manual Requirement**
Rationale: Required by the Code of Virginia § 62.1-44.19: Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190 E.

5. Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9VAC25-31-200 C and the Code of Virginia § 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.), require licensure of operators.

6. **Reliability Class**
Rationale: Required by the Sewage Collection and Treatment Regulations, 9 VAC25-790 for all municipal facilities.

7. **Treatment Works Closure Plan**
Rationale: State Water Control Law § 62.1-44.19. This condition is used to notify the owner of the need for a closure plan where a treatment works is being replaced or is expected to close.

8. **Section 303(d) List (TMDL) Reopener**
Rationale: Section 303(d) of the Clean Water Act requires the total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to Section 402(o)(1)of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in the permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under Section 303 of the Act.

9. **Sludge Reopener**
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-220 C for all permits issued to treatment works treating domestic sewage.

10. **Sludge Use and Disposal**
Rationale: VPDES Permit Regulation, 9VAC25-31-100 P; 220 B.2.; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

11. **Water Quality Criteria Monitoring**
Rationale: State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.

12. **Reduced Monitoring**
Rationale: EPA published "Interim Guidance for Performance -Based Reduction of NPDES Permit Monitoring Frequencies" (EPA 833-B-96-001) in April, 1996. Permittees are granted a reduction in monitoring frequency based on a history of permit compliance.

PART II, Conditions Applicable to All Permits
Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes from the previous permit contained in the reissuance permit:

Outfall No.	Parameter Changed	Monitoring Requirement Changed		Effluent Limits Changed		Reason for Change	Date
		From	To	From	To		
001	TSS	3 Days/Week	1 Day/Week			EPA's Interim Guidance for Reduced Monitoring	08/25/2012
001	Total Residual Chlorine	1/Day	3/Day @ 4 Hr. Intervals			Current Permit Manual	08/25/2012
Special Condition Changes: See paragraph below							

This permit was drafted using guidance provided in the January, 2010 permit manual, which is revised on a continuous basis, resulting in minor changes to permit requirements and conditions and the standard Part II boilerplate.

Water quality criteria monitoring is being required in the reissuance permit, since it was not required in the previous permit.

E.coli monitoring of the effluent is being added, in accordance with EPA guidance, since the receiving stream has an approved bacterial TMDL.

Using discharge monitoring report (DMR) data, five year composite averages for BOD_5 and for total suspended solids (TSS) concentrations were calculated. For the existing 3/Week baseline monitoring in the VPDES Permit, this facility does not qualify for reduced monitoring for BOD_5 according to the DEQ & interim EPA guidance. For existing 3/Week baseline monitoring in the VPDES Permit, this facility *does* qualify for reduced monitoring for TSS according to guidance.

22. Variances/Alternate Limits or Conditions: None

23. Regulation of Users: 9 VAC 25-31-280 B 9 - NA

24. Public Notice Information required by 9 VAC 25-31-280 B:

All pertinent information is on file and may be inspected, and copied by contacting Fred M. Wyatt, Department of Environmental Quality, Southwest Regional Office, 355-A Deadmore St., Abingdon, VA 24210. Telephone: (276) 676-4810 E-mail: frederick.wyatt@deq.virginia.gov.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the DEQ Southwest Regional Office by appointment.

25. Additional Comments:

Previous Board Action: None

Staff Comments:

Application Waivers: For the reissuance application, Form 2A, Part A.12 and Part B6., the permittee has requested waivers for fecal coliform, ammonia, TKN, nitrate plus nitrite, oil and grease, total phosphorus, and total dissolved solids. Since these parameters have not been in the permit for this facility, a waiver is being granted.

Permit History: VPDES Permit No. VA0062561 for this facility was issued on August 24, 1982; was reissued on August 24, 1987, August 24, 1992, August 24, 1997, August 24, 2002, and August 25, 2007 and has an expiration date of August 24, 2012.

Threatened or Endangered Species: According to the attached printout from the Virginia Fish and Wildlife Information Service of the Department of Game and Inland Fisheries (DGIF), one state endangered species, the Tennessee Heelsplitter (Lasmigona holstonia), has been identified within a two mile radius of the discharge. Since this facility is on the list for T&E coordination by DGIF and the Department of Conservation and Recreation (DCR), the necessary information is being sent to these agencies.

Permit Fee: An annual monitoring fee of $2,514 is required, to be paid by October 1 of each year.

26. TMDL: See Item No. 13 above.

PLANNING CONCURRENCE FOR MUNICIPAL VPDES PERMIT

PERMIT NO. VA0062561

FACILITY: Falls Mills-Hales Bottom STP

COUNTY: Tazewell

[ ] 1. The discharge is in conformance with the existing planning documents for the area.

[ ] 2. The discharge is not addressed in any planning document but will be included, if required, when the plan is updated.

[ ] 3. Other

_____

Environmental Manager

_____

Date

ATTACHMENT 1

Treatment Facilities Description & Location

FACILITY DESCRIPTION SHEET DATE:12/21/98

Name of installation FALLS MILLS

Location OFF ROUTE 102, NEAR POCAHONTAS

County WISE

This facility consists of two raw wastewater pump stations, Imhoff tank, two-stage rotating biological contractor unit, duel secondary clarifiers, gas chlorination, duel sulfonators for dechlorination, duel baffled chlorine contact basins, fine bubble diffusers for ost aeration, parshall flume and ultrasonic flow meter, and eight covered sand drying beds.

Pump Stations:

No. 1 - Wastewater Flow, avg flow 31.94 gpm (0.46 MGD)
Peak Flow, Q2.5: 79.80 gpm (0.115)
Wet Well, Storage volume: 335.33 gal.

Pumps, Type: Hydromatic, constant - speed grinder pumps
Capacity: 40 gpm (pumps 1and 2) 80 gpm (pump 3)
Operaring time: 18.4 min.

No. 2 - Wastewater Flow: Ave. Flow, Qavg: 43.06 gpm (0.062 MGD) Peak Flow, Q2.5: 107.64 gpm (0.155MGD)
Wet Well, Storage Volume: 485.32 gal.

Pumps Type: Hydromatic, Constant - speed, Grinder pumps.
Capacity: 54gpm (pumps 1 and 21) 108 gpm (pump)
Operating time: 19.6 min.

Primary Treatment:

Imhoff Tank: Detention time: 5.43 hrs. Gas vent area: 380 sf.
Surface loading 479 gpd/sf (at peak flow)
Weir loading 8,749 gpd/ft. Sludge storage volume 122,422 gal (16,365)

Secondary Treatment:

RBC Type, Single shaft, two stage media. 48,000 sf in first stage, 72,000 sf in second stage.
Sludge returned to headworks of plant.
Power requirements: 150 cfm at 5 psi. hydraulic loading rate: 1.8gpd/sf.

Secondary Clarifiers:

Type, Two duplex full bridge, center feed, peripheral effluent, hopper bottem. Detention time: 10.5 hr. Surface setting rate: 132.8 gpd/sf. Over rate: 755.5 gpd/ft. Side water depth: 7ft. Minium length of travel: 9.96 ft.

Recirculation pumps, Simplex Submersible. No. of pumps: 2 (1per clarifier). Capicity: 40 gpm against 27.8 TDH. Motor 3/4 HP, 3 phase, 60 cycle, 1750 RPM.

Return sludge pumps, type, Duplex submersible, number of pumps: 2. Capacity: 23 gpm against 23.0 THD. Motor 1/2 HP, 3 phase, 60 cycle 1750 RPM.

FACILITY DESCRIPTION SHEET (continued)

Disinfection:	Chlorine contact tanks:	Number of tanks: 2. Detention time 37.3 min (at peak flow). 93.3 min (at ave flow). Duel chlorinators: Regal auto change over, 150 lbs tanks.
Flow Measurement:	Parshall Flume:	Size 3", length 3'. Head capacity 24" (max flow rate 1300 gpm. Ultra Sonic open channel flow meter to continuously measure flow.
Sludge Treatment:	Drying Beds:	8 Beds, width 22' length 36'
Laboratory:	Parameters:	TSS,CL2,PH,DO,BOD5 Length32', width 18'. Appro. 40 square feet counter space.
O & M Manual:		Approved by SWCB 18 September 1989.
Reliability:	Class 111	Continuous operability by standby generator. Audible alarm and light.
Staffing:		Chief operator required to be class 111. Two assistants - Class 111 Staffed from 8:00 AM to 4:00 PM

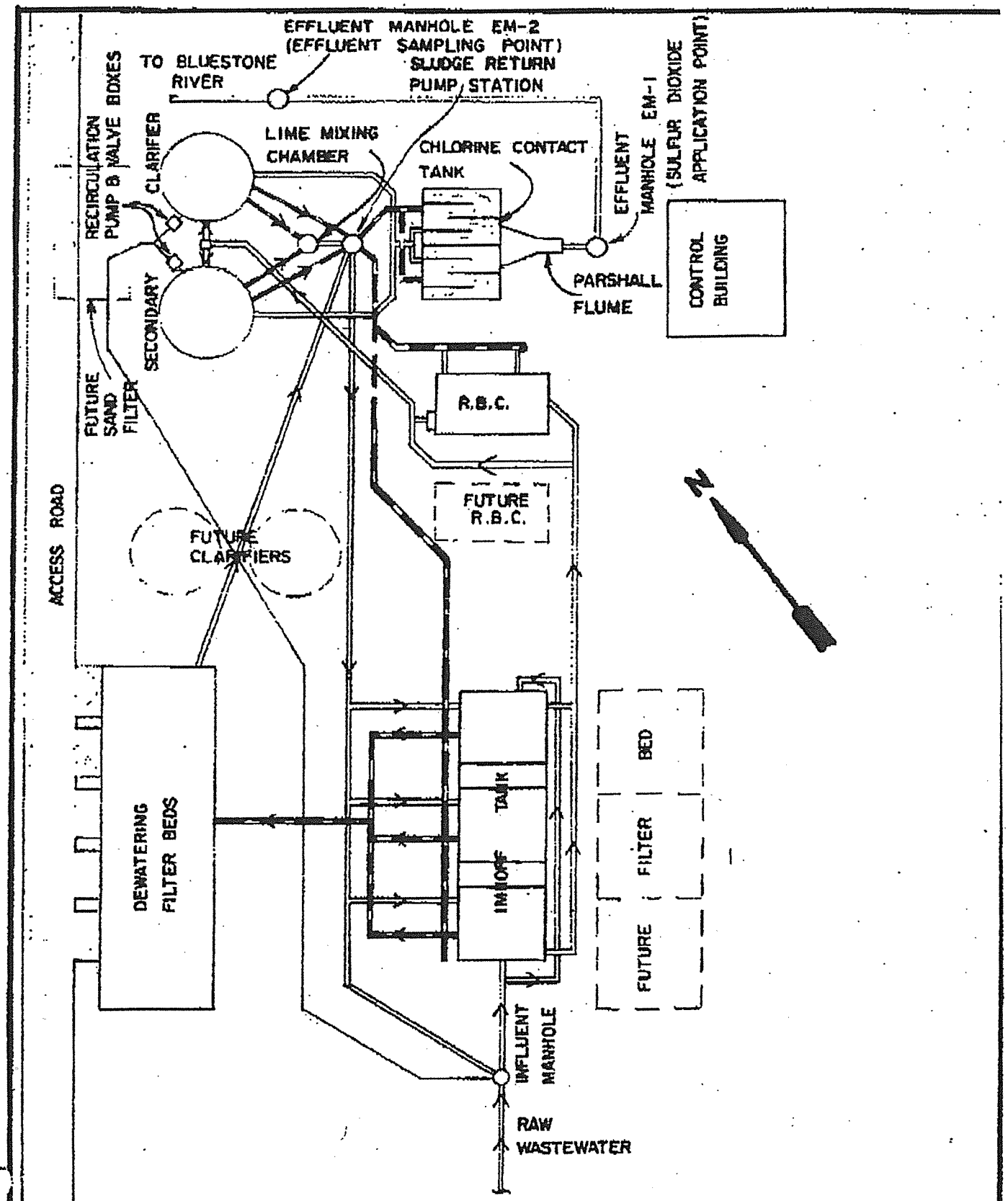
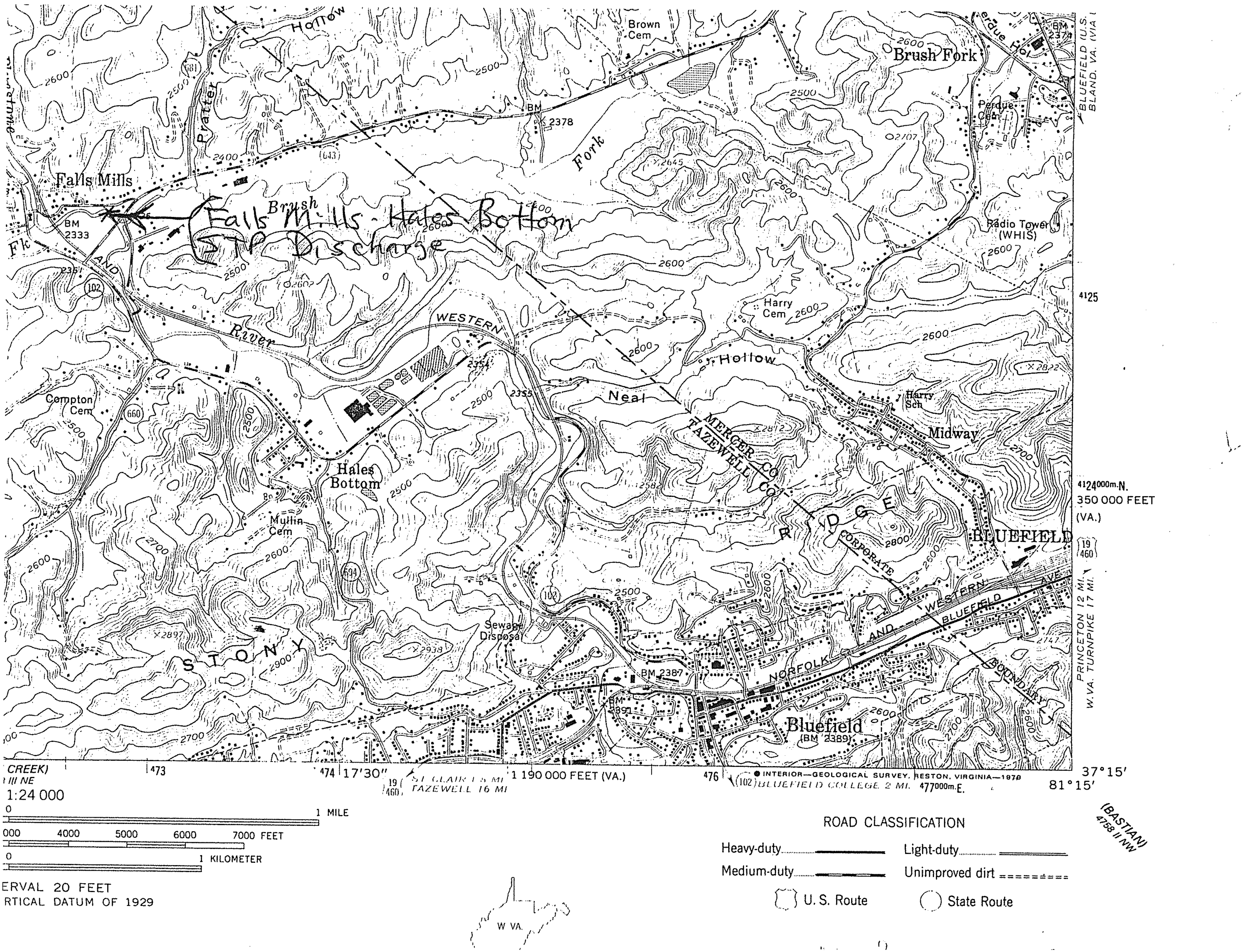


FIGURE 1.2 LAYOUT OF THE FALLS MILLS - HALES BOTTOM WASTEWATER TREATMENT PLANT


Falls Mills Hales Bottom
STP Discharge
Falls Mills
Brush Fork
Brown Cem
Perdue Cem
Radio Tower (WHIS)
Harry Cem
Harry Sch
Midway
Neal Hollow
MERGER CO
TAZEWELL CO
RIDGE
CORPORATE BOUNDARY
BLUEFIELD
Bluefield
(BM 2389)
BM 2387
BM 2378
BM 2333
Hales Bottom
Mullin Cem
Compton Cem
Sewage Disposal
STONY
WESTERN River
NORFOLK AND WESTERN
BLUEFIELD AVE
Pratter
Fork
Hollow
4125
4124000m.N.
350 000 FEET (VA.)
37°15′
81°15′
17′30″
473
474
476
477000m.E.
1 190 000 FEET (VA.)
PRINCETON 12 MI.
W. VA. TURNPIKE 17 MI.
BLUEFIELD (U.S.
BLAND, VA. (VIA I
TAZEWELL 16 MI
BLUEFIELD COLLEGE 2 MI.
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1978
(BASTIAN)
4758 II NW
CREEK)
III NE
1:24 000
0
1 MILE
000
4000
5000
6000
7000 FEET
1 KILOMETER
ERVAL 20 FEET
RTICAL DATUM OF 1929
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
U. S. Route
State Route
W VA.

ATTACHMENT 2

Effluent Limits Calculations

Reduced BOD_5 and Total Suspended Solids (TSS) Monitoring for Falls Mills/Hales Bottom STP

BOD_5:

Long term average (LTA) concentration = 9.57 mg/l

(LTA)/(Permit Limit) = 9.57/14 x100% = 68.5 %

For existing 3/Week baseline monitoring in VPDES Permit, this facility does not qualify for reduced monitoring for BOD_5 according to the DEQ & EPA guidance.

TSS:

Long term average (LTA) concentration = 4.04 mg/l

(LTA)/(Permit Limit) = 4.04/30 x 100% = 13.5 %

For existing 3/Week baseline monitoring in VPDES Permit , this facility qualifies for reduced monitoring to 1/Week for TSS according to the DEQ & EPA guidance. according to the DEQ & EPA guidance.

BOD5		TSS	
Concentration Maximum	Concentration Average	Concentration Maximum	Concentration Average
7.9	10.4	10.9	1.6
8	10.1	10.7	2.2
8.7	10.1	10.5	3.7
8.1	10.3	11.2	3.5
7.7	10	10	4
7.6	10.6	10.8	5.1
7.6	9.4	10.2	5.7
7.7	9.97	9.7	3.8
7.7	9.6	10.6	3.3
7.5	10.2	10.7	4
7.8	9.8	10.2	3.1
8	9.4	9.8	2.5
7.9	9.8	10.1	2.2
8	10.1	10.7	2.3
7.9	9.9	10.4	2.9
7.9	9.9	10.1	2.8
7.9	8.2	9.5	5.2
8.1	9.6	10.1	5.7
7.9	9.5	9.8	6.9
8.1	9.3	9.5	4.3
8.5	9.6	10.1	8.4
8	9.5	9.6	5.3
8	9.7	10.3	4.6
7.9	9.6	10.2	3.5
7.8	9.6	10.1	2.7
7.8	9.6	10	3.4
7.5	9.2	9.7	4.1
7.8	8.7	9.5	4.8
8.1	8.8	9.2	7.1
8	9.1	9.4	4.7
8.2	9.1	9.6	5.2
8.2	9.5	9.8	5.1
8	9.6	10.6	4.1
7.8	9.4	9.4	4.7
7.7	9.7	10.1	2.4
7.6	9.9	10.5	2.5
7.9	9.6	10.4	2.3
7.7	9.4	10	2.6
7.6	9.5	9.8	3
7.6	9.5	10.3	4.6
7.6	9.9	10.1	5.3
7.7	9.5	10.2	5.1
7.7	8.5	9.1	7.7
7.7	9.8	10.1	3.9
8	9.4	10	3.9
8	9.1	9.5	3.5
8.2	9.6	10.3	3.3
8.2	9.5	9.6	1.4
8.2	9.7	10.3	2.9

8.1	9.2	9.6	4.9
8.2	9.8	9.9	2.9
8.1	9.2	9.5	4.9
8.1	9.2	9.9	4.8
8.7	9.569245283	11.2	4.045283019
Max	Avg	Max	Avg

Bluestone River at Falls Mills STP

DA = 44.2 mi^2 at Gage # 03177710

1Q10 = 5.7 cfs = 3.68 MGD
HF1Q10 = 7.7 cfs = 4.98 MGD
7Q10 = 7.8 cfs = 5.04 MGD
HF7Q10 = 13 cfs = 8.40 MGD
30Q10 = 11 cfs = 7.11 MGD
HF30Q10 = 19 cfs = 12.3 MGD
Harmonic Mean = 29 cfs = 18.75 MGD

DA = 55.46 mi^2 at Discharge Point

1Q10 = 3.68 x 55.46/44.2 cfs = 4.62 MGD
HF1Q10 = 4.98 x 55.46/44.2 cfs = 6.25 MGD
7Q10 = 5.04 x 55.46/44.2 cfs = 6.32 MGD
HF7Q10 = 8.40 x 55.46/44.2 cfs = 10.54 MGD
30Q10 = ~~7.11~~ x 55.46/44.2 cfs = ~~13.80 MGD~~ 8.92 MGD
HF30Q10 = ~~12.3~~ x 55.46/44.2 cfs = ~~23.84 MGD~~ 15.43 MGD
Harmonic Mean = 18.75 x 55.46/44.2 cfs = ~~23.53~~ 23.53 MGD

Mixing Zone Predictions for Falls Mills - Hales Bottom WWTP

Effluent Flow = 0.108 MGD
Stream 7Q10 = 6.32 MGD
Stream 30Q10 = 13.8 MGD
Stream 1Q10 = 4.62 MGD
Stream slope = 0.0016 ft/ft
Stream width = 20 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .9865 ft
Length = 362.78 ft
Velocity = .5043 ft/sec
Residence Time = .0083 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 1.6021 ft
Length = 233.56 ft
Velocity = .6719 ft/sec
Residence Time = .004 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .8148 ft
Length = 430.19 ft
Velocity = .4488 ft/sec
Residence Time = .2663 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

Date	WaterShed	Station	TempC	pH
11-Apr-12	VAS-N36R	9-BST066.80	8.4	8.1
6-Feb-12	VAS-N36R	9-BST066.80	7.1	7.5
19-Dec-11	VAS-N36R	9-BST066.80	5	8.1
5-Oct-11	VAS-N36R	9-BST066.80	13.2	8.5
4-Aug-11	VAS-N36R	9-BST066.80	23	8.3
15-Jun-11	VAS-N36R	9-BST066.80	18.1	8.6
2-May-11	VAS-N36R	9-BST066.80	14.1	8.4
14-Feb-11	VAS-N36R	9-BST066.80	6.1	8.6
3-Nov-10	VAS-N36R	9-BST066.80	9.2	8.3
13-Sep-10	VAS-N36R	9-BST066.80	17.5	8.1
13-Jul-10	VAS-N36R	9-BST066.80	18.9	7.8
11-May-10	VAS-N36R	9-BST066.80	12.9	7.9
11-Mar-10	VAS-N36R	9-BST066.80	8.7	7.1
28-Jan-10	VAS-N36R	9-BST066.80	6.3	7.3
16-Dec-08	VAS-N36R	9-BST066.80	8.5	8.3
23-Oct-08	VAS-N36R	9-BST066.80	10.6	8.2
25-Aug-08	VAS-N36R	9-BST066.80	22.1	8.6
3-Jun-08	VAS-N36R	9-BST066.80	17.1	7.6
14-Apr-08	VAS-N36R	9-BST066.80	9.2	8.4
11-Feb-08	VAS-N36R	9-BST066.80	2.9	8
5-Dec-07	VAS-N36R	9-BST066.80	3.8	8.2
11-Oct-07	VAS-N36R	9-BST066.80	14.2	7.9
16-Aug-07	VAS-N36R	9-BST066.80	23.9	7.9
27-Jun-07	VAS-N36R	9-BST066.80	23.6	8.1
26-Apr-07	VAS-N36R	9-BST066.80	15.3	7.7
13-Feb-07	VAS-N36R	9-BST066.80	4.2	7.9

Calculation of Total Ammonia Nitrogen Limits

Facility Name: Falls Mills - Hales Bottom STP
VPDES Permit No: VA0062561
Stream Name: Bluestone River
Stream Tier Designation: I

NH_3-N limits are derived from the ammonia tables or formulas in the Water Quality Standards. Human Health standards are not applicable for ammonia.

The following stream parameter values are being used for the calculations. The dry season is June - December and the wet season is January - May.

Dry Season pH = 8.5 Dry Season Temperature (deg.C) = 22
Wet Season pH = 8.5 Wet Season Temperature (deg.C) = 14

The ammonia nitrogen water quality standards (WQS) are:

Acute: AC_{dry} = 3.2 AC_{wet} = 3.2

Chronic: CC_{dry} = 0.672 CC_{wet} = 1.09

The following flows apply:

Q_e = Design Flow of STP (MGD) = 0.108
Q_{s-1} = 1Q10 Flow (MGD) = 4.62
Q_{s-1w} = 1Q10 High Flow (MGD) = 6.25
Q_{s-30} = 30Q10 Flow (MGD) = 8.92
Q_{s-30w} = 30Q10 High Flow (MGD) = 15.43

The water quality wasteload allocations (WLAs) are calculated as follows:

f = fraction of stream flow to use from MIX Program

Acute:

$$\text{Dry } WLA_a = [AC_{dry}((f)Q_{s-1} + Q_e) - (f)(Q_{s-1})(NH_3\text{-N background})] / (Q_e) \text{ mg/l}$$
$$\text{Dry } WLA_a = [3.2((1)(4.62 + 0.108) - ( )( )( )] / (0.108) \text{ mg/l}$$
$$\text{Dry } WLA_a = 140 \text{ mg/l}$$

$$\text{Wet } WLA_a = [AC_{wet}((f)Q_{s-1w} + Q_e) - (f)(Q_{s-1w})(NH_3\text{-N background})] / (Q_e) \text{ mg/l}$$
$$\text{Wet } WLA_a = [3.2((1)(6.25 + 0.108) - ( )( )( )] / (0.108) \text{ mg/l}$$
$$\text{Wet } WLA_a = 188 \text{ mg/l}$$

Chronic:

$$\text{Dry } WLA_c = [CC_{dry}((f)Q_{s-30} + Q_e) - (f)(Q_{s-30})(NH_3\text{-N background})] / (Q_e)$$
$$\text{Dry } WLA_c = [0.672(( )(8.92 + 0.108) - ( )( )( )] / (0.108) \text{ mg/l}$$
$$\text{Dry } WLA_c = 56.2 \text{ mg/l}$$

$$\text{Wet } WLA_c = [CC_{wet}((f)Q_{s-30w} + Q_e) - (f)(Q_{s-30w})(NH_3\text{-N background})] / (Q_e)$$
$$\text{Wet } WLA_c = [1.09((1)(15.43 + 0.108) - ( )( )( )] / (0.108) \text{ mg/l}$$
$$\text{Wet } WLA_c = 156.8 \text{ mg/l}$$

From these WLAs, it is obvious that no ammonia nitrogen effluent limitations are needed.

Calculation of Total Residual Chlorine

Facility Name: Falls Mills Hales Bottom STP

Assuming a background value of 0 and Tier I Waters:

ACUTE

$$WQ\text{-}WLA = \frac{(Ao_d)(Qs\text{-}1_{dry} + Qe)}{Qe}$$

$$WQ\text{-}WLA_{ad} = (0.019)(4.62 + 0.108)/0.108 = \mathbf{0.83\ mg/l}$$

CHRONIC

$$AWLA_{cd} = \frac{(Co_{d})(Qs\text{-}7_{dry} + Qe)]}{Qe}$$

$$AWLA_{cd} = (0.011)(6.32 + 0.108)/0.108 = \mathbf{0.65\ mg/l}$$

The effluent limitations were calculated using the DEQ's Version 2.0.4 Stats Program. See attached computer printout.

4/17/2012 10:02:30 AM

Facility = Falls Mills Hales Bottom STP
Chemical = TRC
Chronic averaging period = 4
WLAa = 0.83
WLAc = 0.65
Q.L. = 0.1
# samples/mo. = 90
# samples/wk. = 23

Summary of Statistics:

observations = 1
Expected Value = .5
Variance = .09
C.V. = 0.6
97th percentile daily values = 1.21670
97th percentile 4 day average = .831895
97th percentile 30 day average= .603026
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 0.83
Average Weekly limit = 0.427853056625117 ≈ 0.43 mg/l
Average Monthly LImit = 0.381661118702035 ≈ 0.38 mg/l

The data are:

0.5

Due to new flow (stream) data, the TRC limits were recalculated. However, to protect T&E species in stream, existing TRC limits were continued in permit.

Falls Mills - Hales Bottom STP
Metals Calculations for Attachment A

WLA = (Chronic standard) (7Q10 + effluent flow) / effluent flo

Antimony : WLA = (4300) (6.32 + 0.108) / 0.108 = ~~25,58~~ 1000 u

Arsenic : WLA = (150) (6.32 + 0.108) / 0.108 = ~~892~~ 500 u

Cadmium : WLA = (1.13) (6.32 + 0.108) / 0.108 = ~~6~~ 6 u

Chromium III : WLA = (74.1) (6.32 + 0.108) / 0.108 = ~~441~~ 200 u

Chromium VI : WLA = (11) (6.32 + 0.108) / 0.108 = ~~65.4~~ 60 u

Copper : WLA = (9.07) (6.32 + 0.108) / 0.108 = ~~54~~ 50 ug

Lead : WLA = (13.5) (6.32 + 0.108) / 0.108 = ~~80.3~~ 80 u

Mercury : WLA = (0.77) (6.32 + 0.108) / 0.108 = ~~4.6~~ 4 u

Nickel : WLA = (20.27) (6.32 + 0.108) / 0.108 = ~~121~~ 100 u

Selenium : WLA = (5.0) (6.32 + 0.108) / 0.108 = ~~29.8~~ 20 u

Silver : WLA = (3.45) (4.62 ← 1Q10 + 0.108) / 0.108 = ~~151~~ 100 ug

Zinc : WLA = (120) (6.32 + 0.108) / 0.108 = ~~716~~ 400 u

Metals chronic criteria based on a hardness value of 100 mg/l

ATTACHMENT 3

Threatened & Endangered Species Information

Wyatt, Frederick (DEQ)

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:56 AM
To: 'Cindy_Kane@fws.gov'
Subject: FW: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant
Attachments: doc01342320120425103008.pdf

I tried sending this e-mail to Susan Lingenfelser and the address will not work.

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:48 AM
To: 'Susan.Lingenfelser@fws.gov'
Subject: FW: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:42 AM
To: 'susan.lingenfelser@fws.gov'
Subject: FW: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:38 AM
To: Cason, Gladys (DGIF); 'susan'
Subject: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant

Attached is the T&E Coordination Form for this facility.

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

Wyatt, Frederick (DEQ)

From: Mail Delivery System [MAILER-DAEMON@ifw9bct-relay1.fws.gov]
To: Susan.Lingenfelser@fws.gov
Sent: Wednesday, April 25, 2012 10:51 AM
Subject: Undeliverable: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant

Delivery has failed to these recipients or groups:

Susan.Lingenfelser@fws.gov
A problem occurred during the delivery of this message to this e-mail address. Try sending this message again. If the problem continues, please contact your helpdesk.

The following organization rejected your message: ifw9bct-smtp1.fws.doi.net.

Diagnostic information for administrators:

Generating server: ifw9bct-relay1.fws.gov

Susan.Lingenfelser@fws.gov
ifw9bct-smtp1.fws.doi.net #<ifw9bct-smtp1.fws.doi.net #5.0.0 smtp; 550 Susan.Lingenfelser@fws.gov... No such user>
#SMTP#

Original message headers:

Received: from p01c12m016.mxlogic.net (mxl145v247.mxlogic.net [208.65.145.247])
by ifw9bct-relay1.fws.gov (Postfix) with ESMTP id 7526421EF03
for <Susan.Lingenfelser@fws.gov>; Wed, 25 Apr 2012 08:50:02 -0600 (MDT)
Received: from unknown [166.67.65.182] (EHLO CMailB.vita.virginia.gov)
by p01c12m016.mxlogic.net(mxl_mta-6.13.0-3)
with ESMTP id 10f089f4.0.2141112.00-2381.3169860.p01c12m016.mxlogic.net (envelope-from
<frederick.wyatt@deq.virginia.gov>);
Wed, 25 Apr 2012 08:49:37 -0600 (MDT)
X-SBRS: None
X-HAT: Group: RELAYLIST_WHITELIST, Policy: $RELAYED_WHITELIST
X-VITAFiles: Attached: doc01342320120425103008.pdf
X-IronPort-AV: E=Sophos;i="4.75,481,1330923600";
d="pdf'?scan'208,217";a="518845620"
X-VITADrop: Dropped: None
Received: from unknown (HELO COVMSGCES-HUB02.cov.virginia.gov) ([10.192.2.218])
by CRelayB.vita.virginia.gov with ESMTP; 25 Apr 2012 10:48:22 -0400
Received: from COVMSGCES-MBX07.cov.virginia.gov ([169.254.7.121]) by
COVMSGCES-HUB02.cov.virginia.gov ([10.192.2.218]) with mapi id
14.01.0323.003; Wed, 25 Apr 2012 10:48:21 -0400
From: "Wyatt, Frederick (DEQ)" <Frederick.Wyatt@deq.virginia.gov>
To: "Susan.Lingenfelser@fws.gov" <Susan.Lingenfelser@fws.gov>
Subject: FW: T&E Coordination for Reissuance of VPDES Permit No. VA0062561

for Falls Mills - Hales Bottom Sewage Treatment Plant
Thread-Topic: T&E Coordination for Reissuance of VPDES Permit No. VA0062561
for Falls Mills - Hales Bottom Sewage Treatment Plant
Thread-Index: Ac0i8QbVyQJuu2wdQMaaygge13NroQAAGi9AAAA1VIA=
Date: Wed, 25 Apr 2012 14:48:20 +0000
Message-ID: <242303230E87AF4DADC9832B724E14250A343A@COVMSGCES-MBX07.cov.virginia.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
x-originating-ip: [10.173.16.211]
Content-Type: text/plain
MIME-Version: 1.0
X-Processed-By: Rebuild v2.0-0
X-Spam: [F=0.2000000000; B=0.500(0); spf=0.500; STSI=0.500(0); STSM=0.500(0); CM=0.500;
MH=0.500(2012042509); S=0.200(2010122901); SC=none]
X-MAIL-FROM: <frederick.wyatt@deq.virginia.gov>
X-SOURCE-IP: [166.67.65.182]
X-AnalysisOut: [v=1.0 c=1 a=9t5Ukc62g7UA:10 a=P1SfZ9pFqikA:10 a=BLceEmwcHo]
X-AnalysisOut: [wA:10 a=5ueBmeMwPPG+iyP2htdYEg==:17 a=4QIB7afsCjEaWXqD7m0A]
X-AnalysisOut: [:9 a=CjuIK1q_8ugA:10 a=7pKUBqEToG4A:10 a=YMjy5wRwEm8A:10 a]
X-AnalysisOut: [=di2sQV2978cA:10 a=yMhMjlubAAAA:8 a=SSmOFEACAAAA:8 a=duLiw]
X-AnalysisOut: [nvlO3tIRIXAtlMA:7 a=gKO2Hq4RSVkA:10 a=UiCQ7L4-1S4A:10 a=hT]
X-AnalysisOut: [ZeC7Yk6K0A:10 a=mrjOxWj580J4CIYV34UA:9 a=g2F4C83mu8tXgBG_r]
X-AnalysisOut: [p0A:7 a=n3BslyFRqc0A:10 a=bhkaYMs-ANYA:10 a=Sf_gFPzhefAA:1]
X-AnalysisOut: [0 a=TYIskU9ijXR_-ate:21]
Received-SPF: Pass (p01c12m016.mxlogic.net: domain of deq.virginia.gov designates 166.67.65.182 as permitted sender)

Wyatt, Frederick (DEQ)

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:48 AM
To: 'Susan.Lingenfelser@fws.gov'
Subject: FW: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant
Attachments: doc01342320120425103008.pdf

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:42 AM
To: 'susan.lingenfelser@fws.gov'
Subject: FW: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:38 AM
To: Cason, Gladys (DGIF); 'susan'
Subject: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant

Attached is the T&E Coordination Form for this facility.

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

Wyatt, Frederick (DEQ)

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, April 25, 2012 10:38 AM
To: Cason, Gladys (DGIF); 'susan'
Subject: T&E Coordination for Reissuance of VPDES Permit No. VA0062561 for Falls Mills - Hales Bottom Sewage Treatment Plant
Attachments: doc01342320120425103008.pdf

Attached is the T&E Coordination Form for this facility.

Fred M. Wyatt
Environmental Specialist
(276) 676-4810
email: Frederick.Wyatt@deq.virginia.gov

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY	**VPDES PERMITS** **Threatened and Endangered Species Coordination**
To: (X) DGIF, Environmental Review Coordinator ( ) DCR (X) USFWS, T/E Review Coordinator **From: Fred M. Wyatt** **DEQ, Southwest Regional Office** **355-A Deadmore St.** **Abingdon, VA 24210** **frederick.wyatt@deq.virginia.gov**	**Date Sent: 04/24/2012** **Permit Number: VA0062561**
Facility Name: Falls Mills – Hales Bottom Sewage Treatment Plant **Contact: Dahmon Ball, Administrator** **Phone: (276) 988-2243** **Address: Tazewell County Public Service Authority** **P.O. Box 190** **N. Tazewell, VA 24630**	**Location: Intersection of State Routes 102 and 643** **USGS Quadrangle: Bramwell West VA - VA** **Latitude/Longitude: 37°16'34''/81°18'26''** **Receiving Stream: Bluestone River** **Receiving Stream Flow Statistics used for Permit: 1Q10 Flow = 4.62 MGD** **7Q10 Flow = 6.32 MGD** **30Q 10 Flow = 13.8 MGD** **Topo Map Attached**
Effluent Characteristics and Max Daily Flow: See attached draft permit pages	**Species Search Results (or attach database report and map):** **SE: Tennessee Heelsplitter (Lasmigona Holstonia)**

Attach draft permit effluent limits page if available or attach existing effluent limits page (make sure it is clear in your email which one it is – draft current or existing).

DGIF email: Gladys.Cason@dgif.virginia.gov USFWS email: Susan.Lingenfelser@fws.gov
DCR: If Natural Heritage Data Explorer (NHDE) has the needed information DCR does not need this form. If you have additional information you wish to add, you may do so in the comments field on the NHDE form. DCR will contact you directly if they need more information.

Wyatt, Frederick (DEQ)

From: gis@timmons.com
Sent: Tuesday, March 13, 2012 8:16 AM
To: nhwebreview (DCR); Wyatt, Frederick (DEQ)
Subject: Falls Mills-Hales Bottom STP - frederick.wyatt@deq.virginia.gov
Attachments: DCR_NH_REPORT.pdf

Thank you for submitting your project to DCR Natural Heritage. Attached is an overview of the results and potential conflicts.

Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

WebID: W634672197299218750

Client Project Number: VA0062561

PROJECT INFORMATION

TITLE: Falls Mills-Hales Bottom STP

DESCRIPTION: Reissuance of 0.108 MGD VPDES permit

EXISTING SITE CONDITIONS: Existing 0.108 MGD discharge into the Bluestone River with esitimated complete mix at 250 ft.

QUADRANGLES: BRAMWELL

COUNTIES: Tazewell

Latitude/Longitude (DMS): 371633/811825

Acreage: 1

Comments: No proposed upgrades or expansion of this STP is planned at this time. Complete mix calculated at 7Q10 of 6.32 MGD and 1Q10 of 4.62 MGD.

REQUESTOR INFORMATION

Priority: No **Tier Level:** 2 **Tax ID:**

Contact Name: Fred Wyatt

Company Name: DEQ-Southwest Regional Office

Address: 355-A Deadmore St

City: Abingdon **State:** VA **Zip:** 24210

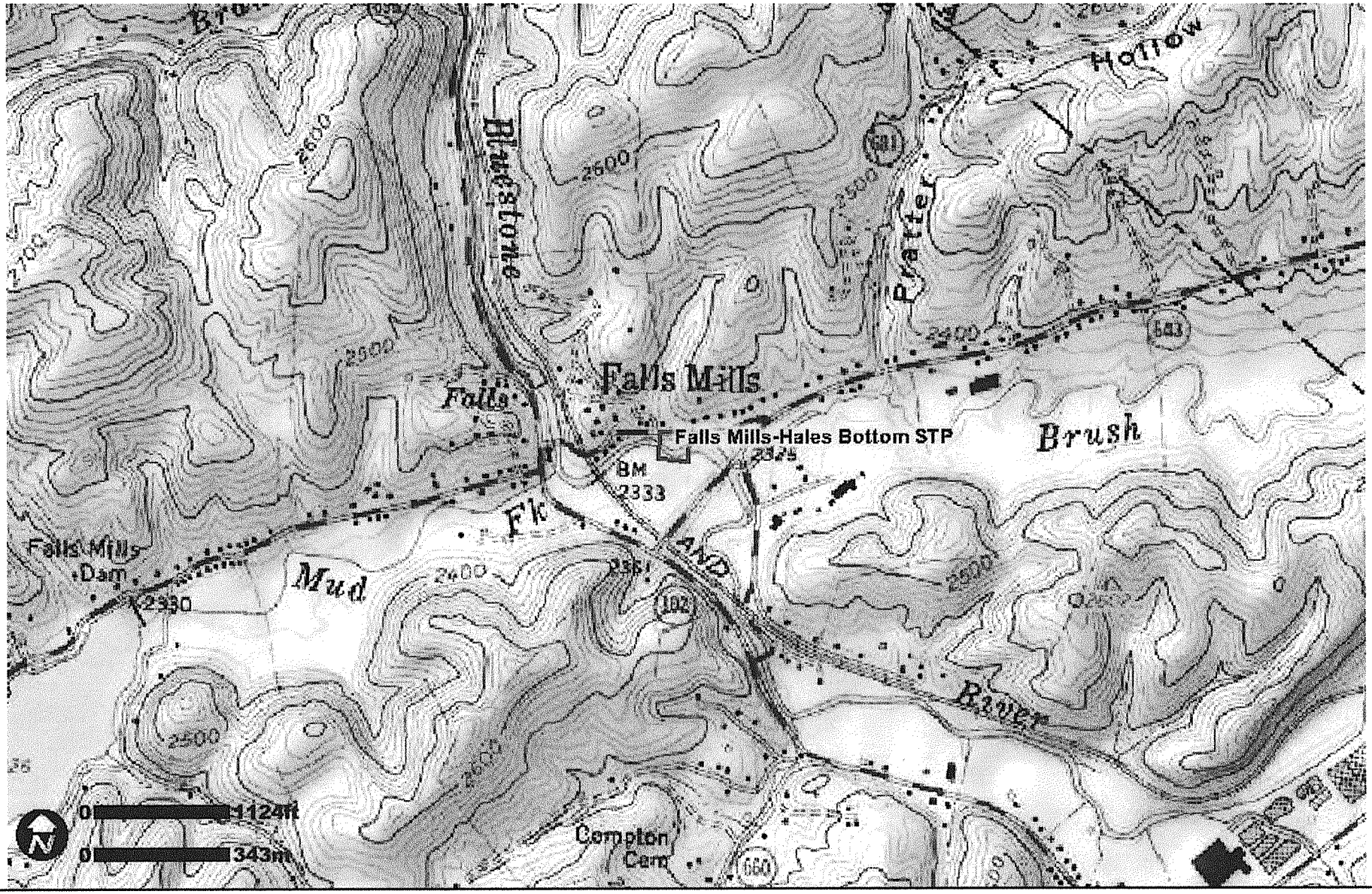
Phone: 276-676-4810 **Fax:** 276-676-4899 **Email:** frederick.wyatt@deq.virginia.gov

Conservation Site Name	Site Type	Brank	Acreage	Listed Species Presence
ROSENBAUM'S WATER	Conservation Site	B3	1,156	NL
BLUESTONE - CLINCH RIVER - INDIAN CREEK - BIG BRANCH SCU	SCU	B2	372	FL
MUD FORK SCU	SCU	B5	21	NL

Natural Heritage Conservation Sites within Search Radius

Site-Name	Group-Name	common-name	scientific-name	GRANK	SRANK	Fed Status	st status	EO Rank	last obs date	precision
BLUESTONE - CLINCH RIVER - INDIAN CREEK - BIG BRANCH SCU	Invertebrate Animal	Tennessee Heelsplitter	Lasmigona holstonia	G3	S1		LE	E	1998	
BLUESTONE - CLINCH RIVER - INDIAN CREEK - BIG BRANCH SCU	Invertebrate Animal	Tennessee Heelsplitter	Lasmigona holstonia	G3	S1		LE	E	2008-05-06	

Natural Heritage Resources within Search Radius



Quads: BRAMWELL

Counties: Tazewell

Falls Mills-Hales Bottom STP

Company: DEQ-Southwest Regional Office

Lat/Long: 371633/811825

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources from the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics files, NATURAL HERITAGE RESOURCES HAVE BEEN DOCUMENTED within two miles of the indicated project boundaries.

You have submitted this project to DCR for a more detailed review for potential impacts to natural heritage resources. DCR will review the submitted project to identify the specific natural heritage resources in the vicinity of the proposed project. Using the expertise of our biologists, DCR will evaluate whether your specific project is likely to impact these resources, and if so how. DCR's response will indicate whether any negative impacts are likely and, if so, make recommendations to avoid, minimize and/or mitigate these impacts. If the potential negative impacts are to species that are state- or federally-listed as threatened or endangered, DCR will also recommend coordination with the appropriate regulatory agencies: the Virginia Department of Game and Inland Fisheries for state-listed animals, the Virginia Department of Agriculture and Consumer Services for state-listed plants and insects, and the United States Fish and Wildlife Service for federally listed plants and animals. If your project is expected to have positive impacts we will report those to you with recommendations for enhancing these benefits.

Please allow up to 30 days for a response.

We will review the project based on the information you included in the Project Info submittal form, which is included in the report that follows. Often additional information can help us make a more accurate and detailed assessment of a project's potential impacts to natural heritage resources. If you have additional information that you believe will help us better assess your project's potential impacts, you may send that information to us. Please refer to the project Title (from the first page of this report) and include this pdf file with any additional information you send us.

Thank you for submitting your project for review to the Virginia Natural Heritage Program through the NH Data Explorer. Should you have any questions or concerns about DCR, the Data Explorer, or this report, please contact the Natural Heritage Project Review Unit at 804-371-2708.
its.

Wyatt, Frederick (DEQ)

From: nhreview (DCR)
Sent: Monday, April 09, 2012 6:12 PM
To: Wyatt, Frederick (DEQ)
Cc: ProjectReview (DGIF)
Subject: VA0062561, Falls Mills-Hales Bottom STP
Attachments: 62119, DEQ VA0062561, Falls Mills – Hales Bottom STP.pdf

Mr. Wyatt,

Please find attached the Department of Conservation and Recreation, Division of Natural Heritage (DCR-DNH) comments for the above referenced project. The comments are in pdf format and can be printed for your records. Also species rank information is available at http://www.dcr.virginia.gov/natural_heritage/help.shtml for your reference.

Please send a confirmation e-mail upon receipt of our comments. Let us know if you have any questions.

Thank you for the opportunity to comment on this project.

S. Rene' Hypes
Project Review Coordinator
DCR-DNH
217 Governor Street
Richmond, Virginia 23219
804-371-2708 (phone)
804-371-2674 (fax)
rene.hypes@dcr.virginia.gov

Conserving VA's Biodiversity through Inventory, Protection and Stewardship
www.dcr.virginia.gov/natural_heritage
Virginia Natural Heritage Program on Facebook

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Division of Natural Heritage
217 Governor Street
Richmond, Virginia 23219-2010
(804) 786-7951

April 9, 2012

Fred Wyatt
Virginia Department of Environmental Quality
Southwest Regional Office
355-A Deadmore Street
Abingdon, VA 24210

Re: VA0062561, Falls Mills – Hales Bottom STP

Dear Mr. Wyatt:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Bluestone River at Falls Mills Stream Conservation Unit (SCU) is located within the project site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Bluestone River at Falls Mills SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this site is:

Lasmigona holstonia	Tennessee heelsplitter	G3/S1/NL/LE

The Tennessee heelsplitter , a rare freshwater mussel species, occurs in the Ohio and Tennessee River drainages (NatureServe, 2009). In Virginia, there are records from the Powell, Clinch, Holston, and New River drainages. This is a mussel of smaller streams, or side-channels and sloughs of larger streams. It is found in fine particulate substrates (sand and mud) at shallow water depths (NatureServe, 2009).

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization and dredging, and the invasion of exotic

mollusk species. Please note that the Tennessee heelsplitter is currently listed as endangered by the Virginia Department of Game and Inland Fisheries (VDGIF).

In addition, the Bluestone River has been designated by the VDGIF as a "Threatened and Endangered Species Water." The species associated with this T & E Water is the Tennessee heelsplitter.

Due to the legal status of the Tennessee heelsplitter, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). To minimize impacts to aquatic resources, DCR also recommends the use of uv/ozone to replace chlorination disinfection and utilization of new technologies as they become available to improve water quality.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The VDGIF maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Shirl Dressler at (804) 367-6913.

Should you have any questions or concerns, feel free to contact René Hypes at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. René Hypes
Project Review Coordinator

CC: Amy Ewing, VDGIF

Literature Cited

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 27, 2010).

Williams, J.D., M.L. Warren, Jr., K.S. Cummings, J.L. Harris, and R.J. Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. Fisheries 18: 6-9.

VaFWIS Initial Project Assessment Report Compiled on 3/9/2012, 1:56:53 PM

Help

Known or likely to occur within a **2 mile radius around point 37,16,34.0 -81,18,26.0** in **185 Tazewell County, VA**

View Map of Site Location

445 Known or Likely Species ordered by Status Concern for Conservation (displaying first 40) (40 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
050023	FESE	I	Bat, Indiana	Myotis sodalis		BOVA,HU6
060169	FESE	I	Bean (pearlymussel), Cumberland	Villosa trabalis		BOVA
060031	FESE	I	Mussel, oyster	Epioblasma capsaeformis		BOVA
060082	FESE	I	Pearlymussel, cracking	Hemistena lata		BOVA
060094	FESE	I	Pearlymussel, littlewing	Pegias fabula		BOVA
060051	FESE	I	Pigtoe, finerayed	Fusconaia cuneolus		BOVA
060052	FESE	I	Pigtoe, shiny	Fusconaia cor		BOVA
060122	FESE	I	Rabbitsfoot, rough	Quadrula cylindrica strigillata		BOVA
050021	FESE	II	Bat, gray	Myotis grisescens		HU6
050035	FESE	II	Bat, Virginia big-eared	Corynorhinus townsendii virginianus		BOVA,HU6
040267	SE	I	Wren, Bewick's	Thryomanes bewickii		BOVA
060080	SE	II	Heelsplitter, Tennessee	Lasmigona holstonia	Yes	BOVA,SppObs,HU6,TEWaters,Habitat
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA,HU6
010342	ST	II	Darter, sickle	Percina williamsi		BOVA
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA,HU6

060163	ST	IV	Papershell, fragile	Leptodea fragilis		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
060121	FC	II	Kidneyshell, fluted	Ptychobranchus subtentum		BOVA
080214	FS	I	Stonefly, Beartown perlodid	Isoperla major		BOVA
080226	FS	I	Stonefly, Kosztarab's common	Acroneuria kosztarabi		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA,HU6
010341	FS	II	Logperch, blotchside	Percina burtoni		BOVA
060050	FS	II	Pigtoe, Tennessee	Fusconaia barnesiana		BOVA
100154	FS	II	Butterfly, Persius duskywing	Erynnis persius persius		BOVA,HU6
010429	FS	III	Sculpin, Bluestone	Cottus sp. 1		BOVA,HU6
100001	FS	IV	fritillary, Diana	Speyeria diana		BOVA
020020	CC	II	Hellbender, eastern	Cryptobranchus alleganiensis alleganiensis		BOVA,HU6
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA
040372		I	Crossbill, red	Loxia curvirostra		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA,HU6,Habitat
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
040306		I	Warbler, golden-winged	Vermivora chrysoptera		BOVA,HU6
020011		II	Frog, mountain chorus	Pseudacris brachyphona		BOVA,Habitat
020030		II	Salamander, green	Aneides aeneus		BOVA,HU6

040052		II	Duck, American black	Anas rubripes		BOVA,HU6
040213		II	Owl, northern saw-whet	Aegolius acadicus		BOVA,HU6
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA,HU6
040304		II	Warbler, Swainson's	Limnothlypis swainsonii		BOVA,HU6
040266		II	Wren, winter	Troglodytes troglodytes		BOVA,HU6

To view **All 445 species** View 445

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (1 Reach)

View Map of All Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Bluestone River (05050002)	SE	060080	SE	II	Heelsplitter, Tennessee	Lasmigona holstonia	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests N/A

Habitat Predicted for Aquatic WAP Tier I & II Species

(3 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
(50500021)	SE	060080	SE	II	Heelsplitter, Tennessee	Lasmigona holstonia	Yes
Bluestone River (50500021)	SE	060080	SE	II	Heelsplitter, Tennessee	Lasmigona holstonia	Yes
Mud Fork (50500021)	SE	060080	SE	II	Heelsplitter, Tennessee	Lasmigona holstonia	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius	Yes
020011		II	Frog, mountain chorus	Pseudacris brachyphona	Yes

Public Holdings:

N/A

Compiled on 3/9/2012, 1:56:54 PM I383077.0 report=IPA searchType= R dist= 3218 poi= 37,16,34.0 -81,18,26.0

PixelSize=64; Anadromous=0.019216; BBA=0.033017; BECAR=0.016737; Bats=0.015853; Buffer=0.176482; County=0.036946; HU6=0.869954; Impediments=0.017046; Init=0.208931; PublicLands=0.021456; SppObsSite=0.105543; SppObsSiteOffset=0.052574; TEWaters=0.026228; TierReaches=0.030588; TierTerrestrial=0.092536; Total=1.568622; Trout=0.020218

TE Waters Group
Bluestone River
(05050002)

37,16,33.9 -81,18,25.9
is **the Search Point**

Display in center **Item Location** is not at map center

Show Position Rings
Yes No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
Yes No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, Observation

Map Overlay Legend

T & E Waters
Federal
Selected Federal
State
Selected State

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

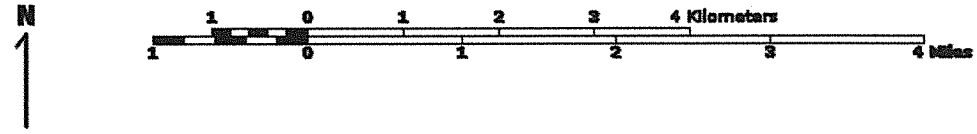
Data Observation Site

Refresh Browser Page

Map Click Pan In Zoom Out Map Scale

Screen Size Small Size Big

Help



Point of Search 37,16,33.9 -81,18,25.9
Map Location 37,16,33.9 -81,18,25.9

Select **Coordinate System:**
Degrees,Minutes,Seconds Latitude - Longitude
Decimal Degrees Latitude - Longitude
Meters UTM NAD83 East North Zone
Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 467982 and top 4130362. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2012-03-09 13:57:25 (qa/qc December 1, 2011 15:16 - tn=383077.0 dist=3218 I)

ATTACHMENT 4

TMDL Information

Summary Report for Bluestone River

ID: VAS-N37R_BST01A96 **State:** VA - 2010 **Single Cat.(User Cat.):** 0 (5D)

Water Information:	**Bluestone River**	
	Location: Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	**Water Type:** RIVER **Size:** 0.59 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses (Class: IV)
Assessed:	Fully Supporting	Wildlife
	Not Supporting	Recreation (VAS-N37R-02) Aquatic Life (VAS-N37R-02) Fish Consumption (VAS-N37R-02)

Types of Assessment

Assessment Type	Uses	Assessment Confidence
BIOLOGICAL	Aquatic Life	
PHYSICAL/CHEMICAL	Aquatic Life Fish Consumption Wildlife	
PATHOGEN INDICATORS	Recreation	
OTHER PUBLIC HEALTH INDICATORS	Fish Consumption	

Assessment Method	Uses
(STATE) VDH Fish Consumption BAN	Fish Consumption
Bacteria - E. Coli	Recreation
Fish tissue analysis (Metals/Organics)	Fish Consumption

Fixed station physical/chemical (conventional plus toxic pollutants)	Aquatic Life Wildlife
Monitoring data more than 5 years old	Aquatic Life
Probabilistic biological monitoring	Aquatic Life
SPMD water column toxics	Aquatic Life

Additional Location Information

COUNTY	TAZEWELL CO
HUC	05050002

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments (N36R-01-BEN)	Aquatic Life	Yes	H
Chlordane (N36R-01-CDANE)	Aquatic Life	Yes	H
Escherichia coli (N36R-01-BAC)	Recreation	Yes	H
Sedimentation/Siltation (N36R-01-BEN)	Aquatic Life	Yes	M
Fecal Coliform (N36R-01-BAC)	Recreation	Yes	H
PCB in Fish Tissue (N36R-01-PCB)	Fish Consumption	Yes	H

Listing Information

Causes	Cycle First Listed	TMDL Schedule	TMDL Completed?
Benthic-Macroinvertebrate Bioassessments	1996	2004	Yes
Chlordane	2004	2016	No
Escherichia coli	2006	2004	Yes

Fecal Coliform	1996	2004	Yes
PCB in Fish Tissue	2002	2012	No
Sedimentation/Siltation	2010	2004	Yes

Source Information

Sources	Associated Causes	Confirmed?
Source Unknown	Chlordane PCB in Fish Tissue	N
Crop Production (Crop Land or Dry Land)	Benthic-Macroinvertebrate Bioassessments Sedimentation/Siltation	Y
Silviculture Activities	Benthic-Macroinvertebrate Bioassessments Sedimentation/Siltation	Y
Unrestricted Cattle Access	Benthic-Macroinvertebrate Bioassessments Sedimentation/Siltation	Y
Rural (Residential Areas)	Escherichia coli Fecal Coliform	N

Comments On:

Overall Assessment

2010 WQA: AWQM station at 9-BST062.47 had 77% (7/9) E.coli samples that exceeded WQS and two TP samples that exceeded the DEQ screening value; no additional impairments were detected. A special study station at 9-BST066.18 has insufficient data for benthic assessment. Fall 2005 SPMD study below Yards measured 1800 pg/l in the Bluestone River. At the AWQM station located at 9-BST023.05 7 E.coli bacteria violations of 12 samples (58%) was detected. Sediment and fish tissue monitoring at 9-BST021.26; total Chlordane, DDT and PCB were detected in a single sediment sample collected in 2002. The DEQ screening value was exceeded for Heptachlor epoxide and Chlordane in a carp sample. The VDH level of concern for PCB was exceeded in several carp samples (2369.25) and the DEQ screening value was exceeded in a white sucker sample. April 2004: SPMD preliminary study at 9-BST021.26 found a water column concentration of PCBs of 1300 pg/l which is less than VA water quality criteria of 1700 pg/l.

Uses

Fish Consumption Fall 2005 SPMD study below Yards measured 1800 pg/l in the Bluestone River. Sediment and fish tissue monitoring at 9-BST021.26; total Chlordane, DDT and PCB were detected in a single sediment sample collected in 2002. The DEQ screening value was exceeded for Heptachlor epoxide and Chlordane in a carp sample. The VDH level of concern for PCB was exceeded in several carp samples (2369.25) and the DEQ screening value was exceeded in a white sucker sample. April 2004: SPMD preliminary study at 9-BST021.26 found a water column concentration of PCBs of 1300 pg/l which is less than VA water quality criteria of 1700 pg/l.

Causes

Benthic-Macroinvertebrate Bioassessments 18192 & 23340, 04.30.2004

Chlordane Chlordane was found in carp.

Escherichia coli 23340, 4.30.2004 AWQM station at 9-BST062.47 had 77% (7/9) E. Coli samples that exceeded WQS.

Sedimentation/Siltation 18192 & 23340, 04.30.2004

Fecal Coliform 18192 & 23340, 04.30.2004 E. Coli-Fed ID 18192. 2006 00016 / 2008 N36R-01-BAC

PCB in Fish Tissue Fall 2005 SPMD study below Yards measured 1800 pg/l in the Bluestone River. Sediment monitoring at 9-BST021.26; total Chlordane, DDT and PCB were detected in a single sediment sample collected in 2002. The VDH level of concern for PCB was exceeded in sev

New River Basin

Cause Group Code: **N36R-01-BAC** **Bluestone River and Big Branch**

Location: This segment extends from Route 460 bridge downstream to the West Virginia political boundary and includes Big Branch from the headwaters downstream to the confluence with the Bluestone River.

City / County: Tazewell Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 4A Fecal Coliform / 4A

Station 9-BST066.80 had a 60% exceedence of the E.coli water quality standard. The AWQM station located at 9-BST062.47 had a 77% exceedence of the E.coli water quality standard, station 9-BST073.32 had a 37% exceedence and station 9-BIG000.12 had a 88% exceedence of the E.coli water quality standard..

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BST04A02 / Bluestone River / From Wright's Valley Creek confluence downstream to N37 at the Big Branch confluence, section 1g, u.	4A	Escherichia coli	1996	2004	6.05
VAS-N36R_BST04B02 / Bluestone River / From PWS intake for Town of Bluefield, downstream to Wright's Valley Creek confluence, section 1g, u.	4A	Escherichia coli	2006	2004	1.63
VAS-N36R_BST05A02 / Bluestone River / From Town of Bluefield PWS intake, upstream to Rt 460 bridge, WQS Section 1h, u.	4A	Escherichia coli	2002	2004	4.93
VAS-N37R_BIG01A10 / Big Branch / Bluestone tributary south of Abbs Valley Ridge, from headwaters in WQS Section 1g, parallel SR 698.	4A	Escherichia coli	2010	2022	3.25
VAS-N37R_BST01A96 / Bluestone River / Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	4A	Escherichia coli	2006	2004	0.59

Bluestone River and Big Branch	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:		16.45

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BST04B02 / Bluestone River / From PWS intake for Town of Bluefield, downstream to Wright's Valley Creek confluence, section 1g, u.	4A	Fecal Coliform	2002	2004	1.63
VAS-N37R_BST01A96 / Bluestone River / Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	4A	Fecal Coliform	1996	2004	0.59

Bluestone River and Big Branch	Reservoir (Acres)	River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:		2.22

New River Basin

Sources:

Rural (Residential Areas)	Sewage Discharges in Unsewered Areas

New River Basin

Cause Group Code: **N36R-01-BEN** **Bluestone River**

Location: This segment extends from the Wright's Valley Creek confluence downstream to the West Virginia political boundary.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic-Macroinvertebrate Bioassessments / 4A Sedimentation/Siltatic

Biological station 9-BST066.80 was impaired based on the VSCI scores of 26 and 31 in 2008.

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BST04A02 / Bluestone River / From Wright's Valley Creek confluence downstream to N37 at the Big Branch confluence, section 1g, u.	4A	Benthic-Macroinvertebrate Bioassessments	1996	2004	6.05
VAS-N37R_BST01A96 / Bluestone River / Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	4A	Benthic-Macroinvertebrate Bioassessments	1996	2004	0.59

Bluestone River	Reservoir (Acres)	River (Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type		6.64

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BST04A02 / Bluestone River / From Wright's Valley Creek confluence downstream to N37 at the Big Branch confluence, section 1g, u.	4A	Sedimentation/Siltation	2010	2004	6.05
VAS-N37R_BST01A96 / Bluestone River / Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	4A	Sedimentation/Siltation	2010	2004	0.59

Bluestone River	Reservoir (Acres)	River (Miles)
Sedimentation/Siltation - Total Impaired Size by Water Type:		6.64

Sources:

Crop Production (Crop Land or Dry Land)

Silviculture Activities

Unrestricted Cattle Access

New River Basin

Cause Group Code: **N36R-01-CDAN Bluestone River**

Location: This segment includes the mainstem from the confluence with Big Branch downstream to West Virginia political boundary; may be found on the Bramwell quad sheet.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Chlordane / 5A

The fish tissue and sediment sampling stations at 9-BST069.46 and 9-BST066.94 had total chlordane levels detected i the sediment in 2002 above DEQ's screening value.

Assessment Unit / Water Name / Description	Cause Category	Name	Cycle First Listed	TMDL Schedule	Size
VAS-N37R_BST01A96 / Bluestone River / Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	5A	Chlordane	2004	2016	0.59

Bluestone River	Reservoir (Acres)	River (Miles)
Chlordane - Total Impaired Size by Water Type:		0.59

Sources:

Source Unknown

New River Basin

Cause Group Code: **N36R-01-PCB** **Bluestone River**

Location: This segment begins at the Route 460 bridge downstream to the West Virginia political boundary. It also includes a segment of Beaverpond Creek that flows from West Virginia into Virginia, sometimes under city buildings and streets and into the Bluestone River and Brush Fork from the West Virginia state line to the confluence with the Bluestone River in Falls Mills.

City / County: Tazewell Co.

Use(s): Fish Consumption

Cause(s) / VA Category: PCB in Fish Tissue / 5A PCB in Water Column

In April 2004 a Special Study was conducted by DEQ and USGS. An SPMD deployed at station 9-BPB000.02 indicated Total PCBs in the water column at 3700pg/l and 1300pg/l in 2005. SPMDs deployed at stations 9-BST0066.18, 9-BST0068.98 and 9-BST0072.65 indicated PCB values of 1800pg/l, 800pg/l and 230pg/l. Fish tissue and sediment stations 9-BST066.94 and 9-BST069.46 found PCBs in exceedence of DEQ's screening value in white suckers. Station 9-BST069.46 also had sediment samples that exceeded the ER-M for PCBs. SPMD sampling in 2004 indicated PCB was 3500pg/l at station 9-BFK003.14.

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BST04A02 / Bluestone River / From Wright's Valley Creek confluence downstream to N37 at the Big Branch confluence, section 1g, u.	5A	PCB in Fish Tissue	2002	2012	6.05
VAS-N36R_BST04B02 / Bluestone River / From PWS intake for Town of Bluefield, downstream to Wright's Valley Creek confluence, section 1g, u.	5A	PCB in Fish Tissue	2002	2012	1.63
VAS-N36R_BST05A02 / Bluestone River / From Town of Bluefield PWS intake, upstream to Rt 460 bridge, WQS Section 1h, u.	5A	PCB in Fish Tissue	2002	2012	4.93
VAS-N37R_BST01A96 / Bluestone River / Mainstem from Big Branch confluence downstream to WV state line near Yards in WQS Section 1g, u.	5A	PCB in Fish Tissue	2002	2012	0.59

Bluestone River	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		13.20

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BFK01A06 / Brush Fork / Bluestone tributary from WV state line downstream to Bluestone River at Falls Mills parallel to SR 643, WQS Section 1g.	5A	PCB in Water Column	2010	2022	1.36

Bluestone River	Reservoir (Acres)	River (Miles)
PCB in Water Column - Total Impaired Size by Water Type:		1.36

2010 Impaired Waters

Categories 4 and 5

New River Basin

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N36R_BPB01A06 / Beaverpond Creek / Bluestone tributary from WV state line, sometimes under town buildings and streets, downstream to Bluestone confluence, WQS Section 1g.	5A	Polychlorinated biphenyls	2006	2018	3.03

Bluestone River	Reservoir (Acres)	River (Miles)
Polychlorinated biphenyls - Total Impaired Size by Water Type:		3.03

Sources:

Illegal Dumps or Other Inappropriate Waste Disposal	Source Unknown

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Search for Approved TMDL Reports

To return all records, simply click the Search button without entering any criteria.

Waterbody Name	Bluestone River	*example searches: Opequon Creek, OPEQUON, op*
City/County	Tazewell	*example searches: Albemarle, ALB, albem*
Major River Basin	New River Basin	
Pollutant		
EPA Approval Date (Year)		
SWCB Approval Date (Year)		

Search | Clear form

Approved TMDL reports

Displaying 1 result.

TMDL Project	Basin	City/County	Pollutant (s)	Comment document	Final report	EPA approval date	SWCB approval date	Comments
Bluestone River Watershed	New River	Bland, Tazewell	E. Coli Sediment	-	Final report **Modification**	09/20/2004 EPA rationale	09/07/2006	

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Table 8.5 VPDES point source facilities and permitted TSS load.

Bluestone River Point Sources		Existing Conditions					Future Conditions
VPDES ID	Name	Permit Discharge (MGD)	Runoff (cm)	Area (ha)	Conc. (mg/l)	TSS (t/yr)	TSS (t/yr
Industrial Stormwater Discharge Permits							
VAR051098	Thistle Foundry & Machine Co.	-	65.44	1.4569	100	0.953	0.953
VAR051047	Floyd Asphalt Paving Co., Inc.	-	65.44	1.0174	100	0.666	0.666
Wastewater Discharge Permits							
VA0025054	Bluefield Westside WWTP						
	6/1-11/30	5.3	-	-	7		
	12/1 – 5/31	5.3	-	-	13		
	Average/yr	5.3	-	-	10	73.220	107.480*
VA0062561	Falls Mills STP	0.108	-	-	30	4.477	4.477
VAG110001	Bluefield Ready Mix	0.009	-	-	60	0.746	0.746
VAG750008	Fast Stop	0.0133	-	-	60	1.103	1.103
VAG750032	Mike Soft Cloth	0.0012	-	-	60	0.099	0.099
VAG750067	Mash Car Wash	0.0008	-	-	60	0.066	0.066
VAG840021	Pounding Mill Quarry	0.001	-	-	60	0.083	0.083
Total Point Source Loads						81.413	115.673

*TSS Load projected for 8.1 MGD discharge from Bluefield Westside WWTP and tier months of June-December & January-May.

ATTACHMENT 6

EPA Check Sheet

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Falls Mills-Hales Bottom Sewage Treatment Plant

NPDES Permit Number: VA0062561

Permit Writer Name: Fred M. Wyatt

Date: April 2, 2012

Major [ ] **Minor** [X] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit– entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?		X	
6. A Reasonable Potential analysis showing calculated WQBELs?		X	
7. Dissolved Oxygen calculations?		X	
8. Whole Effluent Toxicity Test summary and analysis?		X	
9. Permit Rating Sheet for new or modified industrialfacilities?			X

I.B. Permit/Facility Characteristics	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics– cont.	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?	X		
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?	X		
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical locationwhere monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

List of Standard Conditions – 40 CFR 122.41

Duty to comply
Duty to reapply
Need to halt or reduce activity not a defense
Duty to mitigate
Proper O & M
Permit actions

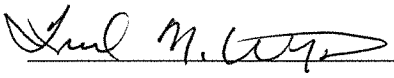
Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset

Reporting Requirements
Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24-Hour reporting
Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 12242(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Fred M. Wyatt
Title	Environmental Specialist
Signature	
Date	04/01/2012